

EXHIBIT G



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/302,303	06/11/2014	Clive Gavin BROWN	O0366.70008US02	4551

23628	7590	10/19/2016
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EXAMINER	
SINES, BRIAN J	

ART UNIT	PAPER NUMBER
1797	

NOTIFICATION DATE	DELIVERY MODE
10/19/2016	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Patents_eOfficeAction@WolfGreenfield.com
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Office Action Summary**Application No.**
14/302,303**Applicant(s)**
BROWN ET AL.**Examiner**
Brian J. Sines**Art Unit**
1797**AIA (First Inventor to File)
Status**
No**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/29/2016.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

- 5) ☒ Claim(s) 47-80 is/are pending in the application.
5a) Of the above claim(s) 47-65 is/are withdrawn from consideration.
- 6) ☐ Claim(s) _____ is/are allowed.
- 7) ☒ Claim(s) 66-80 is/are rejected.
- 8) ☐ Claim(s) _____ is/are objected to.
- 9) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 6/11/2014 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☒ All b) ☐ Some** c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date _____
- 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 4) ☐ Other: _____

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The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

Election/Restrictions

Applicant's election of group I comprising claims 66 – 80 in the reply filed on 3/29/2016 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 1 – 46 were canceled by the applicant.

Claims 47 – 65 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 66 – 80 are rejected under pre-AIA 35 U.S.C. 102(a)/(b)/(e) as being anticipated by Nair (US 2007/0099191).

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Regarding claims 66, 70 and 72, Nair teaches an apparatus structure (sensing unit 105; figure 1; paragraph 32) comprising:

(a) a chip (substrate with individual nanopores comprising nanoporous ion channels; figure 1; paragraph 32) comprising a plurality of individual addressable nanopores, an individually addressable nanopore of said plurality of individually addressable nanopores containing at least one nanopore formed in a membrane (a substrate comprising a silicon nitride membrane; figure 1; paragraph 32) disposed adjacent to an electrode (opposing positive and negative electrodes; figure 1; paragraph 33), wherein each individually addressable nanopore is adapted to aid in the detection of said nucleic acid molecule or portion (paragraphs 11 - 13, 31, 32); and

(b) a processor (processing unit 325 and evaluation processor 305; figures 1, 3; paragraphs 35 - 39) coupled to said chip, wherein said processor is programmed to aid in characterizing a nucleic acid sequence of said nucleic acid molecule based on electrical signals received from said plurality of individually addressable nanopores.

Regarding claim 67, this claim is considered to be a statement of intended use or manner of operation. As indicated above, Nair teaches all of the positively recited structure of the claimed apparatus. The apparatus is considered to be capable of being operated in the intended manner. Nair does teach the use of an electrical stimulus for detection (DC stimulus; paragraphs 31, 52).

The cited prior art teaches all of the positively recited structure of the claimed apparatus. The Courts have held that if the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967); and *In re Otto*, 136

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USPQ 458, 459 (CCPA 1963). The Courts have held that a statement of intended use in an apparatus claim fails to distinguish over a prior art apparatus. See *In re Sinex*, 309 F.2d 488, 492, 135 USPQ 302, 305 (CCPA 1962). The Courts have held that the manner of operating an apparatus does not differentiate an apparatus claim from the prior art, if the prior art apparatus teaches all of the structural limitations of the claim. See *Ex Parte Masham*, 2 USPQ2d 1647 (BPAI 1987). The Courts have held that apparatus claims must be structurally distinguishable from the prior art in terms of structure, not function. See *In re Danley*, 120 USPQ 528, 531 (CCPA 1959); and *Hewlett-Packard Co. V. Bausch and Lomb, Inc.*, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (see MPEP §§ 2114 and 2173.05(g)).

Regarding claims 68, 69 and 71, Nair teaches the incorporation of a membrane (a substrate comprising a silicon nitride membrane; figure 1; paragraph 32). Since the prior art teaches the same membrane structure as claimed, it is inherently anticipated that the membrane has the same properties, i.e., capacitance and resistance. Regarding product and apparatus claims, when the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. The Courts have held that it is well settled that where there is a reason to believe that a functional characteristic would be inherent in the prior art, the burden of proof then shifts to the applicant to provide objective evidence to the contrary. See *In re Schreiber*, 128 F.3d at 1478, 44 USPQ2d at 1478, 44 USPQ2d at 1432 (Fed. Cir. 1997) (see MPEP § 2112.01, I.). Regarding composition claims, if the composition is the same, it must have the same properties (see MPEP § 2112.01, II.). The express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under 35 U.S.C. 102 or 103. “The inherent teaching of a prior art reference, a question of fact, arises

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both in the context of anticipation and obviousness.” *In re Napier*, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995) (affirmed a 35 U.S.C. 103 rejection based in part on inherent disclosure in one of the references). See also *In re Grasselli*, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983) (see MPEP § 2112). “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (see MPEP § 2131).

Regarding claims 73 - 78, these claims are also considered to be statements of intended use or manner of operation. As indicated above, Nair teaches all of the positively recited structure of the claimed apparatus. The apparatus is considered to be capable of being operated in the manner claimed. These claims do not further define or limit the apparatus structure itself from the prior art apparatus.

Regarding claim 79, Nair teaches the incorporation of a workstation with the apparatus (a personal computer; paragraphs 39 - 42).

Regarding claim 80, Nair teaches the incorporation of an integrated circuit (e.g., multiplexer, sense circuit, personal computer; figure 1; paragraph 39).

Double Patenting

A rejection based on double patenting of the “same invention” type finds its support in the language of 35 U.S.C. 101 which states that “whoever invents or discovers any new and useful process... may obtain a patent therefor...” (Emphasis added). Thus, the term “same invention,” in this context, means an invention drawn to identical subject matter. See *Miller v.*

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Eagle Mfg. Co., 151 U.S. 186 (1894); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the claims that are directed to the same invention so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

1. Claims 66 – 80 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 20 – 34 of prior U.S. Patent No. 8,461,854. This is a statutory double patenting rejection.

2. Claims 66 – 80 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 91 – 105 of copending Application No. 14/302,287 (US 2014/0329693). This is a provisional statutory double patenting rejection since the claims directed to the same invention have not in fact been patented.

3. Claims 66 – 80 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 20 – 34 of copending Application No. 14/300,453 (US 2014/0346059). This is a provisional statutory double patenting rejection since the claims directed to the same invention have not in fact been patented.

4. Claims 66 – 80 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 18 – 30 of copending Application No. 14/919,315 (US 2016/0040230). This is a provisional statutory double patenting rejection since the claims directed to the same invention have not in fact been patented.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Sines whose telephone number is (571)272-1263. The examiner can normally be reached on Monday - Friday (8 AM - 4 PM EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lyle Alexander can be reached on (571) 272-1254. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brian J. Sines
Primary Examiner
Art Unit 1797

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